Problems and Prospects of Horticulture in Haryana: A Study of Selected Fruit Crops

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Introduction

Agriculture plays a key role in development of any economy. It provides basic substances to all living being. It is very important ecologically, socially and economically. Sustainable agriculture should become the backbone of the development process of the state. It should be economically viable and lead to increase employment opportunity. Equity in sharing benefits is vital for community participation in the conservation and enhancement of natural resources. The government is aiming to achieve 100 per cent food security in India and also to create an avenue for export of agriculture product for economic upliftment of the farming community. During the tenth plan periods, the (India) is aiming an annual growth rate value 40 per cent in agriculture and 8 per cent in horticulture crops for sustainable agriculture development, poverty alleviation, employment generation. The government is focusing its policies towards overall development of agriculture sector in terms of increasing the cropping intensity by bringing every piece of land under cultivation, productivity increase, maximizing natural resources with parallel effects to conserve them.

Horticulture is science and an art of gardening and cultivating fruits, vegetables, flowers, and ornamental plants. Horticulture generally refers to the agriculture of growing fruit crops, usually on a large scale. Fruits are the essential items in everyday meals as they contain all the required nutrients for a balanced diet. The fruits also have medicinal and aesthetic value.

India is known to be a fruit basket of the world. India has been considered as the second largest producer of fruits after China. It has a great comparative advantage in growing a variety of horticulture crops like fruit, vegetable, flowers, spices, etc. As compared to the other countries would the government have released the importance of horticulture i.e. fruit, vegetable and flower in Indian economy especially on export earners with India losing position in traditional agricultural crops like tea, coffee, spices. Even in domestic agriculture economy the need for developing sustainable system and diversification has released and horticultural crops have been identified as the most remuneration crops for replacing substance crops

because of their high productivity per unit area in the total net area and the gross cultivable area is increasing in the country. However, areas with the distinct wet and dry season are conducive for better productivity. India, with its wide variability of climate and soil, is highly favourable for growing a large range of horticultural crops such as fruits; vegetables, tropical tuber crops, and mushroom; ornamental crops; medicinal and aromatic plants, spices and plantation crops like coconut, groundnut, cashew, cocoa, tea, coffee and rubber.

Haryana is a fast emerging and one of the leading States in the field of horticulture in India. In the State, almost all type of fruits, vegetables, spices, mushroom and flowers are being grown. Horticulture department long term objectives are to make horticulture a profitable diversified farm activity for farmers, achieve potential productivity through sustainable and advanced technologies and provide nutritional security to the masses. Whereas medium and annual objectives would be promoted agro-processing industries for developing the domestic market to enhance production by increasing productivity per unit area, minimize the post-harvest losses, and also provide elite, earn foreign exchange and promote latest technologies in horticulture including plastic-culture mechanization and disease free quality planting material and introduce, etc. Horticulture crops cover 4.90 lakh hectare areas which are 7.58 per cent of the gross cropped area of the state. The production of horticulture crops was 70.50 lakh million tonnes during the year 2015-16. Haryana ranks 22nd in fruit production in the country with a total production of 737.82 thousand million tonnes from an area of 60.92 thousand hectares while Uttar Pardesh stands first within total production of 100.75 lakh million tonnes. Major fruits crops in Haryana are mango, citrus and guava, etc. (GOH 2018-2019)

Review of Literature

Literature review seeks to lay a foundation for the current research. An extensive review regarding the research problem under study was made to establish the body of existing knowledge for planning future line of research work. Though the circumstances in which the research is conducted may be different, review of literature helps not only in deciding appropriate methods and procedures, but also lends a support in the interpretations of the findings. To formulate the problem, precisely and to pin point the importance of crops it seems essential to prevent a brief review of researchers relating directly or indirectly to the present

study. A brief review of literature studied in the present study is given here as per the objectives of the study.

Fakayode et al. (2012) analyzed the risks involved in fruit and vegetable farming in Osun state, Nigeria. The main objective of the study was examined the risk attitude of the farmers, factor influencing attitude as well as farmer's perception of major sources of production and market risks. The study was based on a survey of 150 farmers, comprising 75 predominantly fruit and vegetable farmers, respectively, and covering 12 communities within the six agro-ecological zones in the state. Data were collected using a well-structured questionnaire. Descriptive statistics, discriminate analysis and Kruskal-Wallis ranking analysis were used in the study. It was concluded of the study that maintaining good relationship traders, selling at a low price due to perishability, selling within the locality and non-farm businesses were the major risk management strategies employed by the farmers.

Bung (2013) conducted a study on "Mango Cultivation Industry of India: Problems and Prospects". The study analysed the economics of the various processes involved like procurement, storing, grading, cleaning, packing and the management practices followed by mango cultivators of India. The study was based on primary data. The Single stage cluster sampling coupled with non-probabilistic convenience was used. The well structured interview schedule had been used to collect data. Tools and techniques had been used to analyse the data i.e. Pearson correlation, Pearson chi-square test, tabulation analysis etc. It was found that non availability of fertilizers and acute shortage of labours was the key problems faced by respondents during cultivation and post harvesting. Lack of storage facility and middle men menace was another serious problem facing this industry.

Sain (2013) revealed the economic analysis of guava production in Haryana. The study was conducted in Hisar district, Hansi, Barwala Block, and Fatehabad district Bhuna, Fatehabad Block and Sirsa district Baraguda, Sirsa Block of Haryana which was selected purposively on basis of highest area and production under Guava cultivation. Further, Hisar, Fatehabad and Sirsa market was selected for the market study during 2011-2012. Finally, 60 growers from randomly selected two blocks from each district were selected for the present study. On the basis of the nature of the data, budgeting technique and various economic tools were used for estimating the cost, and retune of production of guava. Both primary, as well as secondary data were used for attaining the objectives of the study undertaken. The overall average operational

cost, per hectare per annum from first to seventh years were found to be Rs. 4748 on plant protection (19.08 per cent), Rs. 5431 on manures and fertilizers (21.83 per cent), Rs. 2828 on picking (11.36 per cent), Rs. 2371 on pruning and cutting (9.52 per cent), Rs. 2248 on intercultural operations and hoeing (9.03 per cent) followed by Rs. 1697 on irrigation and drip maintenance (6.81 per cent).

Ayele (2014) studied the economic analysis of apple fruit production in Tiyo district of Arsi zone, Ethiopia. The study evaluated the financial feasibility of apple fruit production. The study was based on primary data, collected from 102 purposively selected households through a structured interview. Field observation and market assessment were also employed. The data were analyzed by using cost-benefit analysis. In the cost-benefit analysis, Net Present Value (NPV) and Internal Rate of Return (IRR) of apple fruit production were calculated. It was found that the NPV of the apple fruit production was 12, 829.14/0.032 hectares and the IRR was 76.546 per cent. Thus the production of apple fruit is financially feasible.

Doddamani et al. (2014) observed the dynamics of growth and development of Horticulture sector in India and Karnataka: An Economic Analysis. The study was based on the secondary data obtained from websites such as Directorate of Economics and Statistics, Ministry of Agriculture and Co-operation, New Delhi and Bangalore, FAOSTAT, India stat, etc. The time series data on area, production, productivity, per capita consumption, exports, imports of fruits and vegetables for 22 years for the period from 1991-92 to 2011-12 were collected. Triennium averages were worked out by bifurcating the data into two sub-periods viz period I (1993-94-2004-05), period II (2005- 06 to 2009-10) and overall (1993-94 to 2009-10) to capture the impact after the introduction of NHM. The compound annual growth rates were worked out to analyze the trends in sources of growth, export, import of fruits and vegetables. The CAGR of area under fruits has declined from 3.78 to 3.76 per cent from period I to period II but increased to 4.42 per cent in the overall period. There was a significant increase in production of fruits from 2.94 to 5.39 per cent from period I to period II but the overall growth stands at 4.11 per cent. The significant growth in productivity was observed in fruits from -0.79 to 1.42 per cent from the period I to period II while the overall growth stands at -0.32 per cent. The CAGR of area under fruits has increased from -0.17 to 5.92 per cent from period I to period II but increased to only 1.03 per cent in the overall period. There was a significant increase in production growth in fruits from -0.7 per cent to 5.05 per cent from the period I to period II

and the overall growth stands at 1.04 per cent. There was no much improvement in productivity growth in fruits as it declined from -0.54 to - 0.81 per cent from the period I to period II while the growth in overall period stands at only 0.02 per cent.

Kamei (2014) revealed the statistical analysis of household's survey of horticultural crops in Tamenglong District of Manipur state. The main objective of this study was to compare the income of horticulture and non-horticulture income benefitting the farmers. The study based on primary data, collected using a structured questionnaire at the household level. The surveys were done by purposive random selection of 8 villages two each from every subdivision since there were four subdivisions in the entire districts. The sample sizes of households were 180 only. To fulfil the objectives of the study, the gathered primary data were tested using t-test with the help of mean and Standard Deviation (S.D.). It revealed that horticulture income is 8-9 times highly rewarding and pay-off occupation than that of Non-horticulture occupation as regards to survey data of 180 households.

Kadam et al. (2015) measured the growth and performance of horticulture in India. Main objective was the study to know the importance of horticulture and allied factors and the compound growth rates of area production and productivity of the horticultural crops. The study was based on secondary data and data was collected from the horticulture statistical database, NHM, NEW DELHI. The data for 13 years (2001-2013) comprised the area production and productivity of horticultural crops. Simple descriptive analysis was carried out to analyse the importance and significant factors in it. The compound growth rate was calculated to study the performance of the crops with the changing scenario. Fruit production increased five times i.e., from 5.5 million tonnes in 1952-53 to 28.63 million tonnes in 1991-92 and further nine times to 54.04 million tonnes by 2013. The changing scenario encourages private investment, to go for hi-tech horticulture with micro-propagation, protected cultivation, drip irrigation, fertilization, and integrated nutrient and pest management, besides making use of latest post-harvest measures particularly in the case of perishable commodities. The growth rate in mango crop showed positive trend I area, i.e., 5.32 and 4.78 for production. Productivity is decreasing due to market behaviour. The growth rate in onion crop showed a positive trend for area and production i.e., 3.86, 5.51, respectively. The area was decreasing due to market behaviour and aggregate deviations. India's exporter of fruits and vegetables was found to be 12 crores to 13240 crores still at the global level our share is only around 1.4 per cent.

Kashish (2017) examined the trend of area, production, export, and import of different fruits in India. This study was based on secondary data. The data of major fruits producing countries in the world during 2012-13 and area and production of different fruits in India over the years i.e.1980-81 to 2013-14. Growth rate analysis was carried out to ascertain the growth in the area, production, and productivity of fruits in India. Over the years, annual export and import data for period 1980-81 to 2013-14 were used to analyze the direction of trade and the changing pattern of Indian fruit export and import. The growth rate found to be 3.18, 4.72 and 1.48 per cent per annum for area, production and productivity of fruits, respectively. The productivity of fruits in India increased from 9.96 Million Tonnes/Hectares to 14.2 Million Tonnes/Hectares during the year 1991-92 to 2014-15. In India, the result showed that export of fruits increased over the years which was good for the growth of a country but commodities (with low-value addition) was growing at a much higher rate than the growth rate for exports. With modern packaging and fruit treatment technologies there is considerable more value addition to the exportation of fresh fruits. But, yet a lot needs to be done in this sector by improving the efficiency of production and quality of fruits in order to stabilize the markets and also to make product acceptable and price competitive in other importing countries.

Bachhal et al (2018) studied the Prospects of strawberry cultivation in Haryana State, India. This study was based on primary data. The Hisar and Bhiwani districts were selected purposively due to large number of farmers. Saharwa and Chanana village were selected purposively from Hisar and Bhiwani district. However, Saharwa village was more focused as it was emerging as the hub of strawberry cultivation in north India. Total 50 strawberry growers were selected randomly. To collect the data the well structured and pre-tested interview schedule was used. Weighted mean score, percentage and rank order were employed for analyse. Prospects were categorized into two categories i.e. production related prospects and general prospect of strawberry cultivation. The study indicated that overall prospects of strawberry cultivation were medium to high since 78 per cent belonged to these categories. Majority of farmers agreed that demand was increased due to increase the purchasing power of people and better economic returns in comparison to other fruit crops, and high nutritious value of fruit.

Thus, keeping in view the importance of horticulture and fruit crops in an economy of state and country, the present study will be undertaken in Haryana. Most of the reviewed studies had provided detailed crop-specific information on all types of fruits, vegetables, plantations, species, commercial flowers and medicinal plants grown across the State. The rough statistics poses a serious problem in understanding the real development and contribution of horticulture sector in the State. Besides, there is no systematic data on some marginal and minor horticultural crops in the State. To fill this gap, it is necessary to devise an appropriate methodology to be adopted while collecting data of horticulture crops. It is also necessary to identify the problems that are being faced in production and marketing of selected fruit crops. The study will collect a base line data on area, production and productivity from various sources of agriculture and horticulture department of Haryana. This will help in identifying discrepancies of the earlier data that have been collected by different agencies and make necessary changes that are needed at the policy level for data collection of the sector. Besides, it should be necessary to study the present status of selected fruit crops with comparison of principal traditional crops and it is also necessary to estimate the future prospects of selected fruit crops in Haryana. So in the study I would like to consider the following objectives. The findings of the study would be a great significance to the policy makers, administrators, economists and extension workers for making development plans to improve the horticulture sector in the study area.

Specific Objectives of the study

1. To study the area, production and productivity of selected fruit crops in Haryana.
2. To evaluate comparative cost-benefit analysis of selected fruit crops with principal traditional crops in Haryana.
3. To analyse marketing channels, price spread and the major constraints of selected fruit crops in Haryana.
4. To estimate the future prospects of selected fruit crops in Haryana.

Methodology

The study will be based on primary as well as secondary data. Three fruit crops will be selected on the basis of maximum production of these crops grown in Haryana. The

representative districts will be selected from Haryana on the basis of maximum production. The appropriate sampling techniques will be used to select the respondents. The study will be taken for the year 2018-19 or 2019-2020. The primary data will be collected from the respondents through well structured and pre-tested questionnaires. The secondary data will be collected from various relevant sources i.e. Directorate of Horticulture Haryana, Haryana statistical abstract etc. Some other aspects of the study will be covered as per the availability of secondary data. The appropriate tools and technique will be employed for the analysis.

Scope of the study

The study will be undertaken the cost-benefit analysis of selected fruit crops in comparison with principal traditional crops, the area, production and productivity. In addition to it, marketing channels, price spread effect, the major constraints and estimates the future prospects of fruit crops will be calculated. In horticulture, there are many fruits but some selected fruit will be taken up for the study.

Significance of the study

The present study entitled "Problems and Prospects of horticulture in Haryana: A Study of Selected Fruit Crops" is an endeavor to undertake Problems and Prospects of the selected fruit crops in Haryana. The study will be helpful to understand the area, production and productivity of selected fruit crops. It will be helpful to the cost-benefit analysis of selected fruit crops in comparison with major conventional crops. The study will helpful to analyze marketing channels, price spread effect and major constraints of selected fruit crops. The study will be helpful to estimate the future prospects of selected fruit crops. The study will also provide some important policy implications and suggestions for better planning and implementations of the schemes related to fruit crop in the horticulture sector.

Limitation of the Study

This study has certain limitations. The collection of primary data through field survey proved to be a hard experience. However, every effort will be taken to persuading the respondents to deliver the truth. But it is difficult to say that the data collected are completely free from biases. The areas included in the study for detailed investigation are also limited to

the selected Districts of the State because it is not possible to study the whole State in limited time period. The study will be the usual limitations of time and resources encountered by a research student. However, the findings of the study will be very useful in understanding the Problems and Prospects of horticulture in Haryana.

Chapterization of the study

In order to present the study in an effective manner, the study will be divided into five parts:

Chapter 1:- Introduction

Chapter 2:- Review of Literature

Chapter 3:- Methodology and Basic Concepts

Chapter 4:- Results and Discussion

Chapter 5:- Summary and Suggestions

Reference

Ayele Tegenie, Yeshimebet (2014) " Economic Analysis of Apple Fruit Production in Tiyo District of Arsi Zone, Ethiopia". *International Journal of Agricultural Science and Research (IJASR),* **4**(6) December: 165-170.

Bachhal Gurpreet Singh, Pardeep Kumar Chahal, Pawan Kumar (2018), "Prospects of Strawberry Cultivation in Haryana State, India" *Journal of Applied and Natural Science,* **10** (4): 1130 – 1133.

Bung, Purushottam (2013), "Mango Cultivation Industry of India: Problems and Prospects" *ELK Asia Pacific Journal of Marketing and Retail Management.*

Doddamani, S. P., H. Lokesha and B. D. Jagrati(2014) "Dynamics of Growth and Development of Horticulture Sector in India and Karnataka: An Economic Analysis" *Research Journal of Agricultural Science*, **5(**6) December:1286-1289.

Fakayode, S. B., M. A. Y. Rahgi and S. T. Adeniyi(2012) "Economic Analysis of Risks in Fruit and Vegetable Farming in Osun State, Nigeria" *Bangladesh J. Agril. Res,* **37(**3) September: 473-491.

GOH (2019), “Agriculture and Allied Sector” Economic Survey of Haryana 2018-2019, Department of Economic and Statistical Analysis, Haryana: 43-44.

Kadam, M.M., V.J. Rathod, and S.H. Phalke (2015), “Growth and performance of horticulture in India”. *International Journal of Commerce and Business Management*, **8**(2) October: 207-217.

Kamei (2014), “ The statistical analysis of households survey of horticultural crops in Tamenglong District of Manipur state” *International Journal of Scientific and Research Publications*, **4**(6)June: 1-5.

Kashish and Vikrant Dhawan (2017), “A Study on Production and Trade Performance of Fruits in India” *Agric Res J.* **54** (1) March: 108-113.

Savita, R.S. Hooda and Manoj Yadav(2015) “Mapping Horticultural Crops in Dabwali, Rania and Ellenabad Blocks of Sirsa District, Haryana, India” *International Journal of Science, Engineering and Technology Research (IJSETR*), **4**(1) January: 83-85.